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<b>(21) International Application Number:</b> PCT/IT98/00361 <b>(22) International Filing Date:</b> 11 December 1998 (11.12.98)  <b>(30) Priority Data:</b> RM97A000767 11 December 1997 (11.12.97) IT  <b>(71) Applicant (for all designated States except US):</b> EFA S.R.L. [IT/IT]; Via D. Manin, 7, I-04012 Cisterna di Latina (IT).  <b>(72) Inventor; and</b> <b>(75) Inventor/Applicant (for US only):</b> COMPARINI, Emanuela [IT/IT]; Via Ninfin Km. 2,700, I-04010 Doganella di Ninfa, Cisterna di Latina (IT).  <b>(74) Agent:</b> SNEIDER, Massimo; Studio Tecnico Lenzi, Via Lucania, 13, I-00187 Roma (IT).		<b>(81) Designated States:</b> AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GE, GH, GM, HR, HU, ID, IL, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ZW, ARIPO patent (GH, GM, KE, LS, MW, SD, SZ, UG, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG).  <b>Published</b> <i>With international search report.</i> <i>Before the expiration of the time limit for amending the claims and to be republished in the event of the receipt of amendments.</i>
<b>(54) Title:</b> READY-TO-EAT PRE-COOKED PASTA OR RICE BASED DISHES		
<b>(57) Abstract</b>  This invention relates to a ready-to-eat pre-cooked pasta or rice based dish, composed of pre-cooked pasta or rice to which a known or new sauce is added, and which is then pre-portioned and packaged in the preferred form, as single portions and/or fractions of a portion, and which may be reheated by means of any source of heat, such as a gas-ring or electric cooker, traditional or microwave oven, toaster, grill, preserving the original appearance and flavour of the dish.		

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## READY-TO-EAT PRE-COOKED PASTA OR RICE BASED DISHES

Technical field

This invention relates to a ready-to-eat pre-cooked dish, unlike any produced to date by the food  
5 industry, consisting of any kind of pre-cooked pasta or rice to which a known or new sauce is added and which is then pre-portioned and packaged as single portions or as fractions of a single portion, in the preferred shape, which may then be  
10 reheated by means of any source of heat, such as for example, a gas ring or electric cooker, traditional or microwave oven, toaster or grill, preserving the original appearance and flavour of the dish.

15 State of the art

There already are on the market various kinds of ready-made pasta or rice based dishes with added sauces, either deep-frozen or pre-cooked, which the consumer must then reheat or finish to cook in the  
20 oven or in boiling water for the required time.

These ready-made dishes are prepared with different kinds of sauces and are generally pre-portioned and packaged as either single or three, four or more

portions.

Typical examples of ready-to-eat pre-cooked deep-frozen pasta dishes are lasagne and cannelloni, which are sold in single or three, four or more  
5 portion trays, and which must be heated in the microwave for the suggested time.

Other examples of ready-made dishes which require further cooking are freeze-dried pasta and rice based dishes, with added sauces, which must then be  
10 cooked in boiling water, or deep-frozen pasta or rice based dishes mixed with a sauce, which require cooking in a frying-pan with either butter or cooking oil and which must be frequently stirred.

The industrial procedures used to date for the  
15 preparation of ready-to-eat pre-cooked dishes, either deep-frozen or freeze-dried, do not produce dishes which are really quick to prepare and versatile, in the sense that they may be reheated by any instrument capable of producing a sufficient  
20 amount of heat, since they normally require a cooker or boiling water and constant attention while they're being reheated or finished to cook.

It is not possible, in fact, to prepare a deep-

frozen lasagne or cannelloni without a normal or microwave oven, and it is equally impossible to cook a deep-frozen or freeze-dried pasta or rice dish, with an added sauce, without a cooker and a  
5 pan of boiling water or a frying-pan.

Furthermore, these products are not always appetizing to all consumers after cooking or reheating, they may change appearance or shape, assume a "warmed-oven" taste or lose their original  
10 consistency or flavour.

Processes for ready-made pre-cooked dishes are described in the Italian patent 1.170.857; other examples of food production processes are contained in the patents GB 43996/70, CH 16482/67, CH  
15 16735/68, GB 42167/69; none of these, however, contains remedies for the aforementioned shortcomings.

This invention relates to ready-to-eat pre-cooked pasta or rice based dishes, making use of any kind  
20 of pasta and to which known or new sauces are added, which are then pre-portioned and packaged either as single and/or fractions of a portion, and which may be reheated by means of any source of

heat such as, for example, a gas-ring or electric cooker, traditional or microwave oven, toaster or grill, preserving the original appearance and flavour of the dish.

5 Essential technical features

The preferred embodiment of the invention is a cake of pre-cooked pasta or rice, resembling a hamburger in shape and size, which is soft and compact to the touch and inside which one may recognize the ingredients, such as, for example, the pasta and  
10 the sauce with which it has been flavoured.

Following is the production process for obtaining this ready-made pre-cooked dish: the dish is composed of a starchy base, the pasta and/or rice,  
15 and a liquid base, the sauce, which is made of water, seasoning, flavourings, thickeners, gelatinizing substances, and whatever else is necessary to obtain the required density, viscosity, consistency, smoothness, colour and  
20 flavour, so that the result is a complete, well-proportioned and good quality dish.

The starchy base is cooked to the point that it may perform its absorbing and binding function and is

then sent to a special machine where the sauce is added. This is a continuous automatic process, constantly kept at a suitable temperature to preserve the quality and chemico-physical  
5 characteristics of the products.

Once the right mixture of the starchy and liquid bases has been obtained, whose consistency and viscosity are constantly and automatically checked by the processing system, which also keeps the  
10 temperature within a pre-determined range, it is mechanically sent to an automatic filler, where containers of the preferred material or shape (bag, wrapper or outer covering of any kind) are filled with the mixture, which then goes to the cooler  
15 where the desired temperature is reached and where the product is kept for the established time.

After the prescribed maturation, at the desired temperature, the product is extracted from the container (or wrapper or outer covering of any  
20 kind) and is sent to the portioning machine, where it is pre-portioned according to the desired shape and weight.

The product thus obtained may be used as it is or

coated with batter and pre-fried or coated with  
batter and grilled and pre-fried or coated with  
batter, pre-fried and grilled, it is then packaged,  
put into cartoons and stored. The prescribed  
5 chemico-physical and microbiotic tests are then  
carried out and if it is found fit for consumption  
it is sent to the shops.

As previously described, the product may be heated  
in a traditional or microwave oven, frying-pan,  
10 toaster or grill, hot-plate, etc.

The product may be heated in a toaster too because  
it keeps its shape, so that it is not necessary to  
put it inside a container to heat it, and it heats  
up quickly because it is packaged in single  
15 portions, or fractions of a portion.

According to another embodiment of the present  
invention, the ready-to-eat pre-cooked pasta or  
rice dish, after having been cooked and mixed with  
the sauce, is coated with a batter to increase its  
20 compactness.

According to a further embodiment of the present  
invention, the ready-to-eat pre-cooked pasta or  
rice dish is mixed with the sauce, coated with



batter, and then grilled, to improve its appearance.

According to yet another embodiment of the present invention, a gelatinizing substance is added to the  
5 sauce, in proportions ranging between 0.1% and 40%, to increase the compactness of the finished product.

Besides the aforementioned characteristics, a further innovation is represented by the fact that,  
10 in the case of pasta based dishes, any kind of pasta may be used, even long-cut pasta, such as spaghetti or bucatini, since this does not affect the preparation and portioning of the product. This is an important characteristic because it enables  
15 the industry to cater to the preferences and habits of consumers, using a type of pasta which not only perfectly mixes with the sauce, but also helps to control costs since it is cheaper than short-cut pasta, the only type of pasta currently used for  
20 preparing ready-made pre-cooked dishes.

Preferred embodiment of the invention

In order to better highlight the characteristics of this invention, following is an example of the

preferred embodiment, given by way of example only.

The pasta or rice is cooked in salted water, salt being added in the proportion of 0.001% to 7% per litre of water, for the necessary cooking time. Any  
5 type of pasta may be used, even fresh and egg pasta.

When the product is cooked it is drained and mixed with the sauce, which is prepared separately, in the proportion of between 100 and 700 grams of  
10 sauce per kilogram of pasta.

Gelatinizing substances may be added to the sauce, in the proportion of between 0.1% and 40%, to increase the product's compactness.

The pasta and sauce are then machine-mixed, to  
15 obtain a homogeneous mixture, which is then put inside a container, for example a tube-shaped bag, which is filled so as to minimize the amount of air inside the container.

This container is then cooled at a temperature of  
20 between  $-30^{\circ}$  and  $40^{\circ}$  C, opened and the product extracted.

The product, which has assumed the shape of the container, is pre-portioned as slices of a

predetermined size and weight, packaged and preserved by means of one of the known techniques, such as deep-freezing, or in a controlled and cool atmosphere.

- 5 For consumption, it is sufficient to reheat the product until the desired temperature is reached. Obviously, even though the preferred embodiment relates to rice or pasta based dishes, any other product with similar features may also be used,
- 10 such as stuffed pasta, or mixtures of cheese, ham or vegetables.

CLAIMS

1. A ready-to-eat pre-cooked pasta or rice based dish wherein the basic ingredient, the pasta, rice or any other suitable product, is cooked  
5 for a sufficient amount of time according to the traditional cooking techniques, drained, seasoned and mixed with a sauce; this mixture is then placed inside a container and/or bag, which may be closed at both ends and filled so  
10 as to minimize the amount of air contained inside; the container with the product is then subjected, for the necessary time, to temperatures of between 40° and -30° C; the container is then opened and the product  
15 extracted; the product, which keeps the shape of the container, is then pre-portioned as slices; the slices are packaged and undergo one of the known preservation techniques.
2. A ready-to-eat pre-cooked pasta or rice based  
20 dish, as claimed in claim 1, wherein the dish may be reheated and prepared for eating by exposing it to any source of heat, such as, for example, a toaster, traditional or

microwave oven, frying-pan, grill, hot-plate,  
for a sufficient time at the desired  
temperature.

3. A ready-to-eat pre-cooked pasta or rice based  
5 dish, as claimed in claim 1, wherein a  
gelatinizing substance or other thickener  
capable of increasing the product's  
compactness is added to the sauce.
4. A ready-to-eat pre-cooked pasta or rice based  
10 dish, as claimed in any preceding claim,  
wherein the product may be coated with batter  
before being put inside the container.
5. A ready-to-eat pre-cooked pasta or rice based  
dish, as claimed in any preceding claim,  
15 wherein the product may be grilled before  
being placed inside the container.
6. A ready-to-eat pre-cooked pasta or rice based  
dish, as claimed in any preceding claim,  
wherein long-cut pasta, such as spaghetti or  
20 bucatini, etc., may be used instead of the  
short-cut pasta.
7. A ready-to-eat pre-cooked pasta or rice based  
dish, as claimed in any preceding claim,

wherein stuffed pasta may also be used.

8. A ready-to-eat pre-cooked pasta or rice based dish, as claimed in any preceding claim, wherein fresh pasta may also be used.

5 9. A ready-to-eat pre-cooked pasta or rice based dish, as claimed in any preceding claim, wherein the pasta or rice may be replaced by other ingredients, either cooked or uncooked, not excluding vegetables.

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# INTERNATIONAL SEARCH REPORT

International Application No.

PCT/IT 98/00361

**A. CLASSIFICATION OF SUBJECT MATTER**  
IPC 6 A23L1/16

According to International Patent Classification (IPC) or to both national classification and IPC

**B. FIELDS SEARCHED**

Minimum documentation searched (classification system followed by classification symbols)

IPC 6 A23L

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

**C. DOCUMENTS CONSIDERED TO BE RELEVANT**

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 4 693 900 A (MOLINARI CLAUDIO) 15 September 1987 see column 1, line 10 - line 13 see column 2, line 1 - line 47 ---	1-9
X	EP 0 784 938 A (NESTLE SA) 23 July 1997 see example 2 ---	1-9
P, X	EP 0 882 407 A (NESTLE SA) 9 December 1998 see example 5 -----	1-9

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Further documents are listed in the continuation of box C.

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Patent family members are listed in annex.

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# INTERNATIONAL SEARCH REPORT

Information on patent family members

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